

# Defense Cost and Resource Center



***Dr. Ron Lile  
Director, DCARC  
March 2006***

## ***CSDR Focus Group***

The On-line  
DoD Cost  
Research  
Library

Enhancing DoD Cost Analysis

The Defense Cost and Resource Center  
201 12th Street South, Suite 500  
Arlington, Virginia 22202  
Phone: 703.602.3301 Fax: 703.602.8944  
<http://dcarc.pae.osd.mil>



# Agenda Topics for Discussion

- ***Introduction***
- ***Revised FG Charter***
- ***Current CSDR System Status***
  - ***Process (including DAES assessments)***
  - ***Validation***
- ***Status of CSDR Manual and DIDs***
- ***NDIA Issues***
  - ***Subcontractor Data Reporting Issues***
  - ***Definitization***
- ***Recurring/Nonrecurring Definitions***
- ***Other Stakeholder Issues***
- ***Status of FPR Data Submissions (Government Only)***
- ***Improving DoD Acquisition Execution Visibility and Control Studies (Day 2)***



# Meeting Framework

- ***Exchange Information***
- ***Identify, Discuss, and Resolve Issues***
- ***For any unresolved FG issue establish***
  - ***Action Item***
  - ***Responsible Organization(s)/Individual(s)***
  - ***Due Date***

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**Jack Cloos**

## CSDR FG Charter

The collage includes various military and space-related images: a satellite in orbit, a fighter jet flying over mountains, a missile launching, a tank on land, a helicopter, a Humvee, a tank in combat, a large transport aircraft, and a submarine.

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## Current CSDR System Status

A collage of various military and defense-related images. It includes a satellite in space, a fighter jet flying over mountains, a missile launching, a helicopter, a tank, a Humvee, a submarine, a bomber plane, and a transport plane. The images are arranged in a grid-like pattern with some overlap.

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# Validation Metrics

1 OCT 2005 - 10 MAR 2006

Company Code	A	B	C	D	E	Total
<b>#Total Submissions</b>	<b>44</b>	<b>23</b>	<b>95</b>	<b>42</b>	<b>56</b>	<b>260</b>
#Acceptance	24	6	48	17	24	119
#Rejection	20	17	47	25	32	141
Acceptance rate	55%	26%	51%	40%	43%	46%
<b>#Errors</b>	<b>73</b>	<b>61</b>	<b>203</b>	<b>88</b>	<b>150</b>	<b>575</b>
Subject of Errors						
Quantity	17	16	27	21	30	111
WBS Element/Code	7	7	28	13	29	84
Consistency across forms	5	7	28	8	10	58
Subcontractor data treatment	9	5	22	4	11	51
Standard Summary Elements	6	10	12	7	7	42
ODC/Other Cost	9	2	17	3	10	41
Missing reports	2	1	11	13	7	34
Rec/NR	5	1	10	1	14	31
Parent-child relationships	6	6	3	6	8	29
Functional data	2	2	7	3	3	17
Other	5	4	38	9	21	77
<b>#Missing Documents</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>3</b>
CSDR Plan	8	6	6	12	4	36
Dictionary	11	1	6	10	6	34
CDRL						

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**Jack Cloos**

## Status of CSDR Manual

A collage of various military and space-related images, including a satellite in orbit, a fighter jet flying over mountains, a missile launching, a helicopter, a tank, a Humvee, a soldier in a field, a large transport aircraft, and a submarine. Overlaid on the collage are several text elements.

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# ***Coordination/Comments***

- ***Mandatory***
  - ***Concur (with Comments)***
    - ***OUSD/AT&L***
    - ***OUSD/Comptroller***
    - ***OASD/NI&I (Networks and Integration)***
    - ***OSD General Counsel***
    - ***OSD/Washington Headquarters Services***
    - ***OUSD(I)***
    - ***OSA/Cost and Economics***
    - ***OSN/Acquisition Management***



# ***Coordination/Comments (cont'd)***

- *Concur (without Comments)***
  - ***DoD IG***
  - ***OJCS***
- *Awaiting Comments: Air Force Voluntary***
- *NDIA***
- *AF/SMC***



# Next Steps

- ***Resolve issues***
  - ***Recurring/Nonrecurring***
  - ***Subcontractor Reporting***
  - ***Definitization***
  - ***Finalize Manual Organization***
  - ***Finalize DIDs***
- ***Prepare final Manual***
  - ***Submit with final coordination package to WHS for approval***
  - ***Post to DCARC web site upon approval***
- ***Anticipated Release: Summer 2006***

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**Brian Octeau**

**DIDs**

The collage includes various military and space-related images: a satellite in orbit, a fighter jet flying over mountains, a missile launching, a tank, a helicopter, a Humvee, a soldier in a field, a large aircraft, a submarine, and a landing craft on water.

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**Pete Wynne**

## NDIA Issues

The collage includes various military and aerospace images: a satellite in space, a fighter jet flying over mountains, a missile launching, a tank on land, a helicopter in flight, a Humvee in a desert, a tank in combat, a large aircraft on the ground, a smaller aircraft in flight, and a submarine in the water.

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**Jim Myers  
Jeff Cherwonik**

## Recurring/Nonrecurring Definitions

A collage of various military aircraft, tanks, and other defense-related imagery. The images include a satellite in space, a fighter jet flying over mountains, a missile launching, a helicopter, a tank, a Humvee, a submarine, and several aircraft in flight or on the ground.

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# Options to Consider

- 1. Provide comprehensive definition of RE/NRE that works in all situations**
  - *Difficulty in addressing key issues:*
    - *Test Equipment & simulators*
    - *SW integration, testing, & installation*
    - *Correction of SW deficiencies/SW maintenance*
    - *Redesign/rework/retest*
- 2. Provide definition of RE/NRE in general terms w/guidelines by commodity type**
  - *E.g. Space, Aircraft, Missile, Vehicle, UAV, etc.*
  - *SSCAG for Space*
- 3. Consider alternate WBS**
  - *RE/NRE accounts for major items of interest*
  - *Army Cost Element Structure*
- 4. Establish simplistic criteria for cost classification**

# ***RE/NRE Definition Today***

## ***Recurring (RE) =***

- “***repetitive elements of DEVELOPMENT and INVESTMENT (i.e. Procurement) costs,***
- ***that vary with the quantity being produced***
- ***During ANY program phase.”***

-DoD 5000.4-M-1(C) (5.2.2)

## ***Nonrecurring (NRE) =***

- “***those elements of DEVELOPMENT and INVESTMENT (i.e. Procurement) costs,***
- ***that generally occur only once***
- ***During the life cycle of the system.”***

-DoD 5000.4-M-1(C) (5.2.3)

# SOME COMMON FALLACIES

- **NRE = RDT&E Appropriated items**
- **NRE = Whatever PM says**
- **NRE = Development phase only**
- **RE = Procurement Appropriated items**
- **RE = Production phase only**

- **TRUTH: Classification as RE/NRE not tied to:**
  1. **Appropriation**
  2. **Program phase**
- **OTHER TRUTHS:**
  1. **NRE activities/costs generally occur only once**
  2. **RE activities/costs tend to vary with quantity produced**

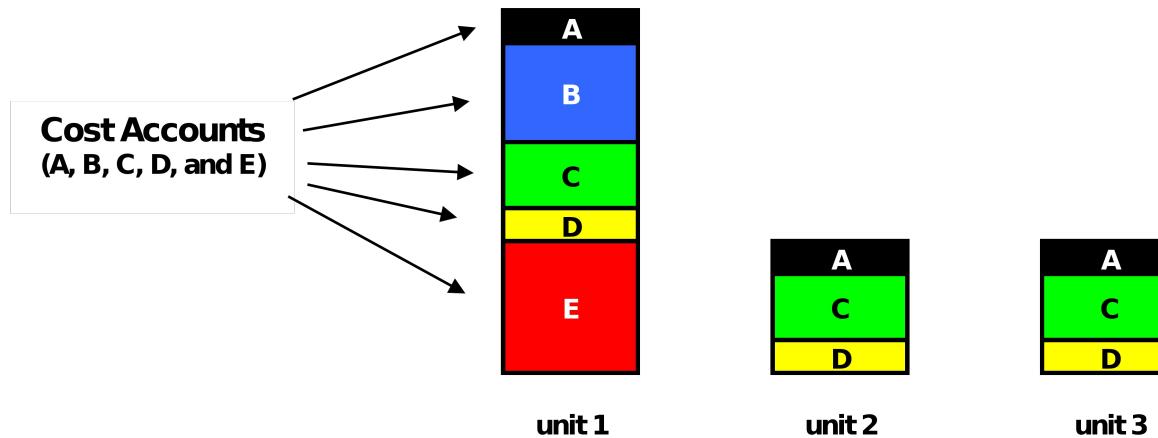
# Possible RE/NRE Approach

- ***Cost classification as RE/NRE not dependent on the nature of the end item***
- ***Define what RE costs are; anything else is NRE***
- ***Ex:***
  - Given that **n** units are built -- the activities performed and resources consumed in producing **n+1** units are those very activities and resources that are RECURRING (for any given number of units, including the first one).

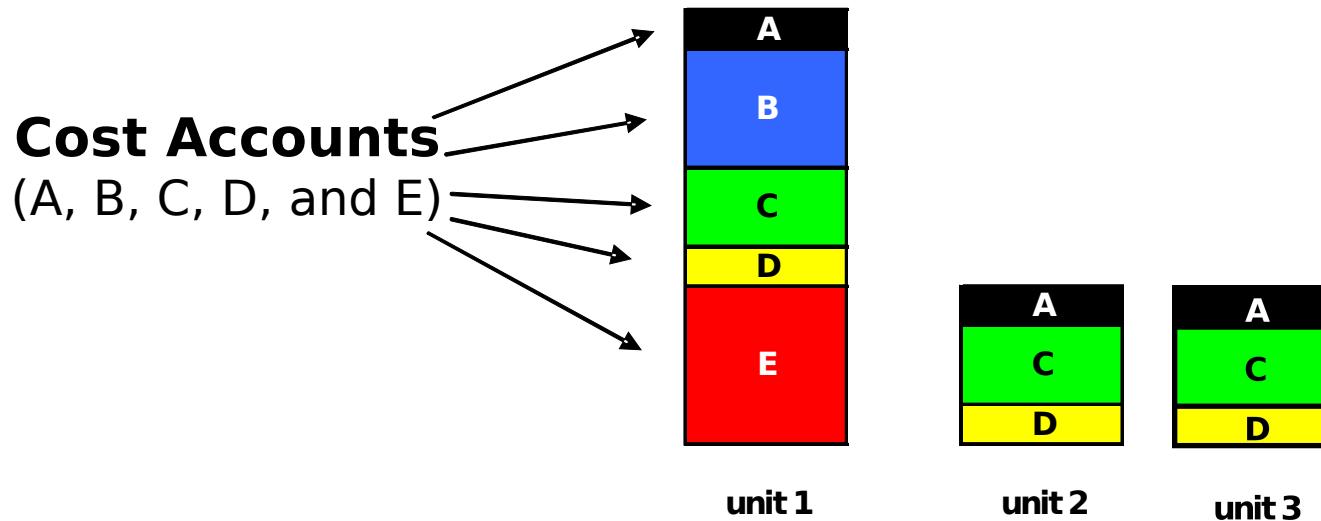
# Nonrecurring VS Recurring

## Example

- Assume a contractor is building one widget, and accumulating cost/hours in 5 accounts (a, b, c, d, and e).
- When asked to identify accounts that will accrue cost/hours for building the (hypothetical) second unit, let's assume the contractor replies that accounts a, c and d will incur additional cost/hours.
- Very simply we can deduce that accounts a, c, and d are recurring. The principle applies to the second unit ...AND the first unit...and to all units that follow.



# Nonrecurring VS Recurring



Given that costs are repeatedly incurred in accounts a, c, and d, these costs are recurring.



# Nonrecurring VS Recurring

- *Given that costs are repeatedly incurred in accounts a, c, and d, these costs are recurring ... even though the units themselves are unique and nonrecurring*
- *The cost classification is not dependent upon the nature of the end unit.*
- *There are many instances in development where there will be no follow-on units using the same materials and process. Yes, we could consider these units to be nonrecurring units - nonetheless, these nonrecurring units do indeed have recurring costs.*

# Commodity Approach

- **SSCAG defines RE/NRE in general terms:**
  - **NRE:**
    - *Initial Development*
    - *Upgrades & Improvements*
  - **RE:**
    - *Spacecraft hardware production*
    - *Ground hardware production & installation*
    - *Installation of developed SW in ground stations*
    - *Replicated space hardware in ground stations*
    - *Spares*
    - *Test equipment, software, & procedure maint.*
    - *System operation & maintenance*
- **Not tied to color of money**

# Commodity Approach

- **Provides guidelines by commodity type**
  - ex: **Space Systems:**
    - Space HW & ground support equip
    - Ground Station HW
    - Flight & Ground SW
    - SEIT/PM
    - Operations & Support
    - Skill Retention & Contract Closeout
- **Examples of guidelines provided:**
  - **Integration & testing of SW => NRE**
  - **Installation and check out of SW => RE**
  - **Correction of SW deficiencies after IOC => NRE**
  - **SW maintenance after IOC => RE**
  - **For test equip, consider purpose of equip:**
    - **If to support development, then NRE**
    - **If to support operations, then RE**
    - **If dual purpose and only one item, then RE**
    - **If multiple items and dual purpose, then 1<sup>st</sup> NRE; remainder RE**
  - **For SEIT/PM:**
    - **Through requirements definition => NRE**
    - **After design completion => RE**

# Alternate WBS Approach

- ***Establish two accounts for each major item of interest (RE and NRE)***
- ***Integrate RE/NRE into WBS structure***
  - ***Ex: Army Cost Element Structure (CES)***
    - ***Segregation by color of money:***
      - ***1.0 RDT&E Funded Elements***
      - ***2.0 Procurement Funded Elements, etc.***
    - ***Elements of interest broken out in RDT&E:***
      - ***Prototype Manufacturing***
      - ***Development Tooling, etc.***
    - ***Production includes both RE/NRE aspects***



# Establish Simplistic Criteria

- ***Treat all costs as NRE before CDR; RE after***
  - ***Problems include:***
    - ***RE fabrication sometimes begins prior to CDR***
    - ***Redesign/rework/retest activities might occur after CDR***
- ***Conduct a detailed review after CDR of all costs***
  - ***Segregate into RE/NRE at that time***
  - ***Could be a burden on companies***
- ***Conduct a post-award conference to establish both WBS and classification of RE/NRE***

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All

## Other Stakeholder Issues

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**Glen Gulden**

## Status of FPR Submissions

A collage of various military and defense-related images. It includes a satellite in space, a fighter jet flying over mountains, a missile launching, a helicopter, a tank, a Humvee, a submarine, a bomber plane, and a transport plane. The images are set against a dark blue background with some white text overlays.

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## Improving DoD Acquisition Execution Visibility and Control Studies

A collage of various military aircraft and ground vehicles. It includes a satellite in space, a fighter jet flying over mountains, a missile launching, a helicopter, a tank, a Humvee, a landing craft on water, and several large transport planes. Overlaid on the collage are several text boxes.

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# **Execution Visibility and Control Studies**

- ***Data Policy and Process Assessment (formerly the EVMS/CSDR Integration Study)***
  - ***Objectives***
  - ***Approach***
  - ***Results to Date***
- ***Data Analysis (Other Studies)***

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## Common Observations Gathered from Industry

A collage of various military aircraft and ground vehicles, including a satellite in space, a fighter jet flying over mountains, a missile launching, a helicopter, a tank, a Humvee, a submarine, and several aircraft in flight or on the ground.

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# Overview

- ***Policies & Procedures***
- ***Central Repository***
- ***Work Breakdown Structure***
- ***RE/NRE Classifications***
- ***Functional Cost Categories***
- ***Other Common Issues***



# Policies & Procedures

- ***Companies frequently not participating in CWIPTs***
  - *Primes and subs should both participate*
- ***CSDR not used by contractor or PM to:***
  - *Manage program*
  - *Estimate cost*
- ***Company-wide EVM policies/processes exist; not so for CSDR***
  - *DIDs and/or CSDR Manual typically used as substitutes*
  - *Some Companies have policies/processes for Cost Estimating*



# Policies & Procedures

- ***Barriers to internal company-wide consistency:***
  - ***Different accounting systems/CAS Disclosures***
  - ***Different contractual requirements***
  - ***Different business segment management structures***
  - ***Differences in company lines of business***
- ***Cases exist in which the government is managing contractor efforts by CLINs***
  - ***CLINs should be used solely for accounting purposes***
  - ***Companies do not manage by CLINs***



# Central Repository

- ***Contractors indifferent to sending data to common warehouse***
  - *So long as OSD doesn't call them with questions*
- ***Need consistency in data submittals as follows***
  - *CPR Formats 1-4 using EDI ANSI 839 transaction set w/possible change*
  - *CPR Format 5 usually in MS Word*
  - *CFSR in MS Excel (could enter into wInsight)*
  - *CSDR in MS Excel*
  - *IMS using Transaction Set 806/native software*
- ***IMS could be challenging to store in central repository***

# Functional Cost Categories

- ***Manually intensive effort to provide in 1921-1 format***
  - ***Today companies frequently budget to IPT structure, not cost centers***
  - ***Companies generally budget and estimate by internal functional categories***
- ***EACs for functional cost categories even more difficult***
  - ***Budgeting at Control Account level***
  - ***Actuals for functional cost categories are easy, but not for EACs***
- ***Difficulty in breaking out ODC by functional category***
  - ***Time consuming to identify what is in ODC***



# Functional Cost Categories

- **Most companies do not break out material into functional cost categories (managed at P.O. level or by type of mat'l)**
  - Gets allocated to functional cost categories
  - Small vendors rely on billing system only; primes have to go back and estimate the actuals for them
  - CSDR Manual does not address accruals of material liabilities
- **Difficulty in assigning some labor to functional categories:**
  - Product Support: could be ENG or MFG
  - Financial Mgt/Program Management (not necessarily ENG)
  - Numerous categories for Quality Assurance (not nec. QC)
  - Quality and Tooling frequently rolled into MFG



# Work Breakdown Structure

- **Preference to start with MIL-HDBK-881 and tailor as appropriate**
  - Preference for a product-oriented WBS
  - But contractors follow what gov't PM tells them: will not challenge RFP
- **Need WBS defined to Level required as part of the RFP**
  - More information passed earlier the better
  - Pre-Award for single source,
  - Post-award for competitive
- **Follow-on contracts have legacy WBS; difficult to change:**
  - May require changes to MIS to capture new structure (\$\$)
  - New data becomes inconsistent with the past

# Work Breakdown Structure

- ***Inconsistent WBS structures for CCDR and CPRs cause mapping issues***
- ***Perceived requirement to maintain static WBS for CCDR reporting***
- ***Gov't contracting personnel's misunderstanding of the Level 3 WBS leads to problems***
  - ***Violates parent/child relationships***

# RE/NRE

- ***Consistent definition of RE/NRE lacking in Gov't***
  - *In some cases, Gov't PMs/KOs dictating RE/NRE*
  - *RE/NRE may vary by commodity class*
- ***RE/NRE costs usually approximated at some level***
  - *Control Accounts, Work Packages, or higher*
  - *Inconsistencies across companies and within business segments as to where RE/NRE data are identified*
- ***CSDRs only produced for a small portion of the business base***
  - *Doesn't make sense to require RE/NRE segregation in underlying systems*
  - *An approximation of some order may be more appropriate*
  - *The key is to do it consistently*



# Other Common Issues

- **Need to address:**
  - **Authorized Unpriced Work (AUW)**
  - **Subcontractor reporting**
- **FFP contract does not negate requirement for CSDR reporting**
  - **Common fallacy is no data required!**
- **Costs are high for WBS changes during contract**
  - **New accts and mapping, renegotiating with subs**
- **CPR includes estimated actuals, CCDR does not**

# Conclusions

- ***Changes need to occur in the contracting process***
  - ***Government needs to improve consistency***
  - ***Pre/Post-award Conference key to establishing consistent WBS up front***
  - ***Need consistent definition of RE/NRE***
    - ***Consider accepting a first-order approximation of RE/NRE in lieu of changing underlying systems***
- ***Consider changing functional cost categories***
  - ***To better reflective today's management structure***
  - ***Need to coordinate w/DoD Estimating community for acceptability***